Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

REV 15d

CHICAGO ELECTRIC POWER TOOLS

ITEM 67631

3 LB ROTARY ROCK TUMBLER

Visit our website at: http://www.harborfreight.com
Email our technical support at: productsupport@harborfreight.com

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.
Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein.
Tools required for assembly and service may not be included.

⚠WARNING

**Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.**

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠DANGER **DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.**

⚠WARNING **WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

⚠CAUTION **CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.**

NOTICE **NOTICE is used to address practices not related to personal injury.**

CAUTION **CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.**

General Tool Safety Warnings

WARNING Read all safety warnings and instructions. *Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.*
Save all warnings and instructions for future reference.

1. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
2. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
3. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
4. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
5. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
6. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)

NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH			
	25'	50'	100'	150'
0 – 6	18	16	16	14
6.1 – 10	18	16	14	12
10.1 – 12	16	16	14	12
12.1 – 16	14	12	**Do not use.**	

TABLE A

7. USE PROPER EXTENSION CORD. Make sure your extension cord is in good

condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

8. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

9. ALWAYS USE SAFETY GLASSES. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.

10. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

11. DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and the like.

12. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.

13. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.

14. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

GROUNDING INSTRUCTIONS

⚠WARNING **TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION READ AND FOLLOW THESE INSTRUCTIONS:**

110-120 VAC Grounded Tools: Tools with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

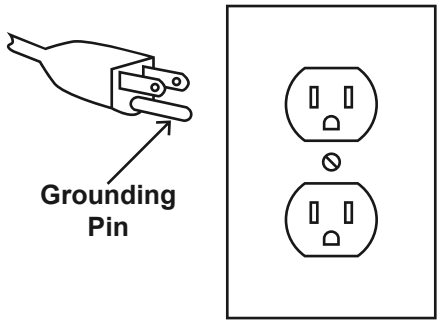
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.

6. Repair or replace damaged or worn cord immediately.



125 VAC 3-Prong Plug and Outlet
(for up to 125 VAC and up to 15 A)

7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated above in **125 VAC 3-Prong Plug and Outlet**. The tool has a grounding plug that looks like the plug illustrated above in **125 VAC 3-Prong Plug and Outlet**.

8. The outlet must be properly installed and grounded in accordance with all codes and ordinances.

9. Do not use an adapter to connect this tool to a different outlet.

Tumbler Safety Warnings

1. **DO NOT USE OUTDOORS.**

2. **DO NOT USE WITH SAND.**

3. Do not place Tumbler on a table. The unit's vibration may cause the Tumbler to move when placed on a smooth, slippery surface.

4. Use only in a safe, accessible location (such as a garage floor) near a power outlet.

5. Do not use near flammable materials.

6. Do not use in a closet or drawer; the Tumbler requires proper ventilation.

7. Avoid extreme temperatures. Do not let Tumbler freeze as the water in the Rubber Barrel (12) will freeze and become unbalanced. This can overload the motor.

8. Do not touch motor immediately after use. Motor becomes hot to the touch during operation.

9. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

10. Avoid unintentional starting. Prepare to begin work before turning on the tool.

11. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.

12. WARNING: Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Some examples of these chemicals are:
    - Lead from lead-based paints
    - Crystalline silica from bricks and cement or other masonry products
    - Arsenic and chromium from chemically treated lumber

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. (California Health & Safety Code § 25249.5, *et seq.*)

13. WARNING: The cord of this product contains lead and/or di (2-ethylhexyl) phthalate (DEHP), chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)

14. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS.

Specifications

Motor	120 VAC / 60 Hz
Capacity	3 lb.
Barrel Type	Rubber (allows for quieter operation)

UNPACKING

When unpacking, make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at 1-888-866-5797 as soon as possible.

HOW TUMBLER WORKS

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

WARNING **TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION: Turn the Power Switch of the tool to its "OFF" position and unplug the tool from its electrical outlet before assembling or making any adjustments to the tool.**

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

The motion in the Barrel of a Tumbler simulates the natural action of flowing water or ocean waves. Beaches and riverbeds contain rocks and pebbles smoothed by water and the abrasive sand it carries. As rocks grind upon one another with constant water and sand in the mix, they begin to round and smooth. Although this is a constant process, it does not however, naturally polish the rocks.

The Tumbler uses an abrasive media instead of sand. It is graded by grain size, from fine powder sized grains, up to large sized grains. By changing (usually by weekly intervals) the grain size, rotating from coarse, medium, to fine, the rock or gemstone is smoothed much more quickly than the natural process.

To polish using a Tumbler, add a metallic oxide compound (not included). The complete

process for a gemstone or rock to go from rough to a smooth, polished finish, usually takes from 4-6 weeks.

Note: An **Abrasive Kit (Item 30956)** is available from Harbor Freight Tools. The kit includes 4 oz. of coarse grit abrasive, 4 oz. fine grit, 2 oz. of pre-polish abrasive and 2 oz. of polish.

OPERATING INSTRUCTIONS

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Tool Set Up

⚠WARNING **TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:**
Turn the Power Switch of the tool to its "OFF" position and unplug the tool from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY: DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED. Moving guards must move freely and close instantly.

Work Piece and Work Area Set Up

1. Designate a work area that is applicable for prolonged Tumbler use. The work area must not allow access by children or pets to prevent distraction and injury.
2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area with enough extra length to allow free movement while working.

General Operating Instructions

1. **CAUTION! Always check the Tumbler on a regular basis to make sure the unit is running properly and is not over-heating.** Make sure that conditions around the tumbler are unchanged, and that the tumbler continues to operate in a safe location.
2. Before the first use, and once a month thereafter, put a few drops of oil on the Driving Shaft (42) bearings.
3. Check the V-Belt (40) tension. It must be kept as loose as possible without allowing it to slip on the Pulley (36). Check before each use.
4. Make sure the exterior of the Rubber Barrel (12) is clean so that it doesn't slip on the rollers. Wipe it with a soapy cloth, then wipe it clean with a damp cloth, and dry thoroughly. Do not use liquid cleaners or solvents.
5. Make sure that the Stop (6) is lightly touching the Barrel Lid (9). This will prevent the Barrel Lid from rubbing against the housing and will reduce friction.
6. To open the Rubber Barrel, remove the Barrel from the unit and then remove the Knurled Nut (7) and the Washer (8). Next, remove the Barrel Lid (9).
7. **Note:** It is imperative to load the Tumbler with the proper amount of materials, or the process will not be successful, and the motor could be damaged. An underloaded barrel will not lift rocks up the inner side walls allowing

the cascading effect. Also, the abrasive material in an underloaded Tumbler will tend to form a slurry and will not be effective. An overloaded Tumbler will not allow the rocks to cascade. Lastly, too much water will cause the abrasives to float and not do their job.

8. "Charging" a barrel means loading it. Charge your barrel from 1/2 to 3/4 full. More pointed or abrasive rocks or stones will require closer to 3/4 full, leaving a 1/2 full barrel when it comes time to polish.

9. **Note:** During tumbling, the stones will be somewhat reduced in size.

10. Choose stones that are similar in nature. They should have a mix of sizes ranging from small (3/16" to 3/8") to large (3/4" to 1"). 25% of the stones should be in the smaller range. Split the remaining volume between medium sized (3/8" to 5/8") and large sized (5/8" to 1") stones.

11. For best results use a four step polish process. First, use a silicon carbide grain, 60-90 grit size. Second, use a fine silicon carbide grain, 220 grit or a little finer. Next, use a 600 grit silicon carbide grain or a pre-polish. Lastly, use a polish of Tin Oxide, Cerium Oxide, or Titanium Dioxide. When tumbling hard materials, it might be necessary to repeat the steps.

    Amounts of abrasive (for 3 lb. Tumblers):
    Coarse Grind: 4 Tbsp.
    Medium: 4 Tbsp
    Pre-polish: 6 Tbsp.
    Polish: 6 Tbsp.
    Burnish (soap): 1 Tbsp.
    Plastic Pellets

12. Add enough water to reach the bottom of the top layer of rocks.

13. Seal the Rubber Barrel and replace the Barrel Lid, Knurled Nut and the Washer.

14. Set the Rubber Barrel on the rollers and turn on the Power Switch (27). Make sure to check the Lid seal during the first ten minutes to make sure the tumbler isn't leaking.

Note: You can use this Tumbler to work with metal and metal jewelry (without gemstones). This Tumbler may be used to take the jagged, sharp edges off of small metal parts. To polish brass, gold, silver, or copper, use polishing media designed for that specific purpose.

Note: For more in-depth information on polishing jewelry, we recommend you purchase a jewelry polishing handbook.

First Grind, Pre-Polish, Polish and Burnishing

First Grind: Run the Tumbler for 24 hours, checking for gas build-up at the first twelve hours. Slowly open the Barrel Lid, releasing the small amount of gas that builds up during the process. Check the stones, they should show slightly rounded edges.

Clean the seals and close the Lid. It is important to release the gas, otherwise it will thicken the abrasive slurry. After another 24 hours check again. If the slurry is thickening, add a little water.

Run for one hour and check again. If it is still thick, add some more water. Let the Tumbler run continuously, but check daily. Continue this process for 7-10 days to remove the sharp edges and rough areas. Be patient. This is the most important step. When all of the edges are rounded you are ready for the next step.

Note: Between steps you must clean the Rubber Barrel and stones. Pour off the slurry into a disposable container (such as a milk carton) and take care that the stones remain in the
Rubber Barrel.

WARNING! Never pour the slurry into your home plumbing system.

Next, place the stones into a clean container or plastic bag. Fill the Rubber Barrels 1/2 full with water and clean out the remaining slurry and grit. Wipe and dry with a paper towel. To clean the stones, gently slosh them around in clean water and remove them a few at a time checking for breaks or cracks. Discard broken or cracked stones. Place the stones in a plastic colander, or old nylon sock and rinse them completely off. There should be no slurry or grit remaining on the stones.

Second Grind: Carefully replace stones into the Rubber Barrel. If the Barrel is less than 1/2 full, add plastic pellets (not included) to help cushion the stones. Then add medium grit (see page 5) and water up to the bottom of the top layer of rocks. Reseal and tumble.

Run it for 2-3 days before checking. They will begin to smooth. After seven days they should have a smooth finish. If not, let them go another 2-3 days. Clean again as you did after the first grind.

Pre-polish: Place stones into the Rubber Barrel adding the correct amount of pre-polish water and plastic pellets (not included) if necessary. Let it run for a week, checking every other day. After a week take out 2-3 stones to test the progress. On a dampened piece of leather, old rug, or towel, sprinkle a small amount of polishing compound, and rub the stone vigorously with it. You should see a definite shine in a few moments. If they shine, clean the Rubber Barrel and you are ready for the last step. If not, pre-polish and check in 24 hours.

Polish: Gently set the stones in the Rubber Barrel. Charge the tumbler with fresh water polishing compound and plastic pellets (if needed). Make sure the volume is at least 1/2 full, preferably 3/4 full. Tumble for 5 to 7 days. If they look the same dry as they do wet, then they are finished. If they have a slight film, they need to be burnished.

Burnishing: Remove the stones, clean the Rubber Barrel and remove and recover the plastic pellets (set aside). Place the stones back in the Rubber Barrel and replace the same pellets. Use powdered soap such as Ivory®. Do not use liquid detergents or dishwasher powders that have bleach. Add water as in previous steps and seal the Rubber Barrel. Tumble for four days, and clean the barrel.

Notes to remember:

1. Always clean Tumbler between steps.
2. When polishing or burnishing use plastic pellets (they will wear out during use).
3. Use a log book to keep track of each step.
4. If starting with stream-worn or smooth stones, you may be able to eliminate the first step.
5. Purchase a mineral book which details the selection of stones for tumbling. As you learn about relative hardness of each stone you will achieve greater success by not mixing soft and hard stones.
6. Always dispose of material properly.

MAINTENANCE AND SERVICING

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION: Turn Power Switch to its "OFF" position and unplug tool from its electrical outlet before performing inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE: Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE FIRST USE and once a month following,** put a few drops of oil on the Driving Shaft Bearing (42).
2. **BEFORE EACH USE,** inspect general condition of tool. Check for loose hardware, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, and any condition that may affect its operation.
3. **AFTER USE,** wipe external surfaces of the tool with clean cloth.
4. **⚠WARNING! If supply cord of power tool is damaged, it must be replaced only by a qualified service technician.**

V-Belt Inspection and Tensioning

1. Check the V-Belt (40) tension. It must be kept as loose as possible without allowing it to slip on Pulley (36). To Adjust Belt Tension:
   a. Unplug the Power Cord (28) from its outlet.
   b. Turn unit over.
   c. Loosen the Screws (35) and remove the Screen (34).
   d. Check V-Belt for cracks, tears or other damage. If needed, replace V-Belt. Replacement V-Belts are sold under Sku 93835.
   e. Reinstall the Screen and four Screws.
2. The O-Ring (37) near the V-Belt may also need to be replaced as needed. Five extra replacement O-Rings are included with this Tumbler.
3. Make sure the exterior of the Rubber Barrel is clean so that it doesn't slip on rollers. Wipe with soapy cloth, then wipe clean with damp cloth. Dry thoroughly. Do not use liquid cleaners or solvents.

PLEASE READ THE FOLLOWING CAREFULLY

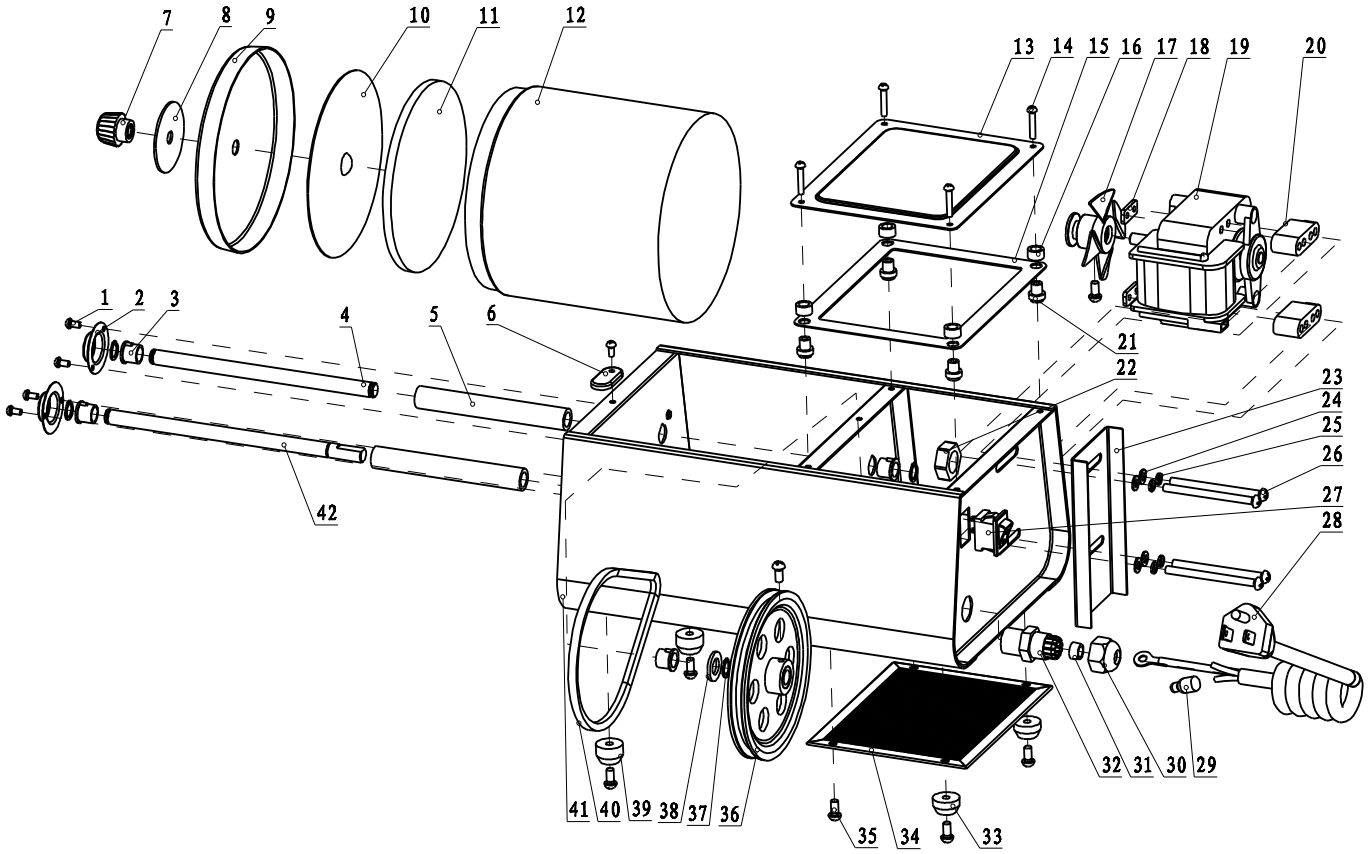
THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

PARTS LIST

Part	Description	Qty.
1	Screw (M3x5)	5
2	Shaft Cover	2
3	Bushing Set	4
4	Shaft A	1
5	Idler Shaft Set	2
6	Stop	1
7	Knurled Nut	1
8	Washer	1
9	Barrel Lid	1
10	Boot Gasket	1
11	Inner Lid	1
12	Rubber Barrel	1
13	Top Cover	1
14	Screws (M3x16)	4
15	Middle Plate	1
16	Spacers (B)	4
17	Fan	1
18	Square Nuts	2
19	Motor	1
20	Motor Connectors	2
21	Spacers	4

Part	Description	Qty.
22	Inner Nut	1
23	Adjusting Plate	1
24	Washers (Ø4)	4
25	Spring Washers (Ø4)	4
26	Screws (M4x50)	4
27	Power Switch	1
28	Power Plug/Cord	1
29	Plug	1
30	Outer Nut	1
31	Small Set	1
32	Nuts Connector	1
33	Foot A	4
34	Screen	1
35	Screws (M4x8)	6
36	Pulley	1
37	O-Ring (Ø8)	6
38	Washer (Ø8)	1
39	Foot B	2
40	V-Belt	1
41	Base	1
42	Driving Shaft Bearing	1

ASSEMBLY DIAGRAM



Please note: Not all parts are washable.

Record Product's Serial Number Here:_____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

LIMITED 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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